REDEEMER
UNIVERSITY COLLEGE

the Armitt
Collection

Charlotte Mason's House of Education,
Scale How, Ambleside, UK, 2009

The **Charlotte Mason Digital Collection** is a not-for-profit database created in 2009-2011 to assist scholars, researchers, educators and students to discover, use, and build upon the Charlotte Mason Collection of archives, journals and books housed in the Armitt Library & Museum (UK). To learn more about this database or to search the digital collection, go to The Charlotte Mason Digital Collection.

Your use of images from the **Charlotte Mason Digital Collection** is subject to a License. To publish images for commercial purposes, a license fee must be submitted and permission received prior to publication. To publish or present images for non-profit purposes, the owner, Redeemer University College, must be notified at cmdc@redeemer.ca and submission of a copy of the context in which it was used also must be submitted to the owner at cmdc@redeemer.ca. Credit lines, as specified in the License, must accompany both the commercial and non-profit use of each image.

Unless you have obtained prior permission, you may not download an entire issue of a journal nor may you make multiple copies of any of the digital images. Higher resolution images are available. [Low resolution (150 dpi), single copy printing is permitted: High resolution images for publication can be purchased. Please contact Redeemer University College in writing as specified in the License to request high resolution images.

While the document originals are housed in the Armitt Library & Museum, Redeemer University College owns the rights to the Digital Images (in jpg/pdf format) of the original archival documents and artifacts. The original Digital Images and database metadata are owned and maintained by Redeemer University College. Multiple images are bound together in PDF Packages. Click here to download the latest version of Adobe Reader for better viewing. In the PDF, click an image thumbnail to view it.

This project was made possible through collaboration among the Armitt Library & Museum (Ambleside, UK), Redeemer University College (Ancaster, Canada) and the University of Cumbria (UK) and with the financial assistance of the Social Sciences and Humanities Research Council of Canada.

Need help? If you do **not** see a side-bar with image thumbnails:
Some of the PDF packages are large and will take some time to download. A very large PDF package may open more successfully if you download it first to your desktop. (From inside the database record, right-click on the link to the PDF package and save the link to your desktop.) Once it's on your desktop, you can open it up with a recent version of Adobe Reader.

If you have a Macintosh with Safari, the default program to open PDFs is Preview, which does not open the PDF packets. Mac users need to download Adobe Reader. If this cover page appears without a list of PDF files (either at the side or bottom of the screen), look for a paper clip or a menu option to view attachments. If you click that, you should see a list of the pages in the PDF package.

Viewing files with Linux: This works with the default PDF viewer that comes pre-installed with Ubuntu. While viewing this cover page in the PDF viewer, click "View" on the top toolbar, and check the box that says "Side Panel". That will bring up the side panel. The side panel will show only this cover page. Click the 'arrow' at the top of the side panel, and it will give you the option to view "attachments." If you click that, you should see a list of PDF files, which are the pages in the PDF package.

Social Sciences and Humanities
Research Council of Canada

Conseil de recherches en
sciences humaines du Canada

Canada

absolutely, so as to please others, but here are the results won for himself. He has learnt to express a mental image in clay, which, although imperfect, reveals to him the action of mind and will on matter; he has learnt to act at the instigation of another, to carry out his wish, and to form and carry out a wish of his own. His eye responds infinitely better than before to his hand in the way of directions, presentations, ideas and suggestions, and impulse; the oscillations of his eyeballs have decreased; the fixing of his eyeball at an angle is rarer and less persistent. The child's vision, the "idiot eye," is more under the control of his own will and that of those around him. The transition from things and acts to speech has been in this manner. His vocabulary is now reasonably correct; things and their names have been presented together, and in presenting objects care has been taken to name them along with their qualities, movements, characteristics; and, in addition to this, much attention has been paid to contrast, and along with a given quality, its opposite had been cited; similarly analogous ideas had been introduced where appropriate. Thus nothing had been spoken of without setting alongside of it some contrast or some analogous conception or object. Pictures, too, and portraits he loved to look at, having learnt to give value to every detail. In this way he knows by their face and actions a number of great men.*

"But," someone will say, "Seven or eight years old, and the child has not been learning to read or write. When will his education really begin?" "When," says Séguin, "his mind shall have been stored by the exercise of his senses with a number of correct impressions of objects. Let him remain in an 'analphabetic' condition until his preliminary stock of ideas gives him some chance of being able to follow what he reads, and then he will not be exposed to the absurdity of being set to read by some teacher, really more imbecile than himself, what he does not understand a word of. Let him for some time at any rate be set to read what he has himself helped his teacher to compose and what he has himself written."

See *Archives of Medicine*, October, 1879.

ELEMENTARY SCIENCE-TEACHING.

BY MARY EVEREST BOOLE.

(*Continued from page* 604.)

WE must now go a little further into the questions:—What is that essence of scientific method on which its essential scientific quality depends? What are the conditions for securing it? How has it been introduced into science colleges? How might it be introduced into elementary teaching? Are there any special difficulties in so introducing it; and if so, how can they best be overcome?

An individual gets his information about any given class of facts from a variety of sources: his own observations on facts; what he learns on more or less reliable testimony as to what others have observed; theories—some true, some false, which have been held by human beings to account for the facts; and his own thinking about the facts. The essence of scientific method, so far as I at all understand the great men who have formulated it, consists in keeping the produce of the three external sources of information *apart in the mind* till the lid is shut down, so to speak, on the outer world, and the process of thinking has begun.

In learning dead languages there is little scope for the process which in science we call thinking: the pupil has not got to wrestle with Nature and wring from her any secret about why things are so, but to know how words were used by certain ancient authors. Philologists indeed do think about how such and such use of words grew up; but that is precisely because they are not mere classical scholars, but are students of linguistic science. And as to the other processes by which we gain knowledge, there is no need for the classical student to keep them severely separate. There is no need for him to be able to say exactly how he came by his knowledge of the quantity of a Latin syllable. Whether he first noticed how Virgil uses it, or learned a grammar rule about it, or was punished at school for a mistake, matters nothing from a literary point of view, provided that he knows how it ought to be used. Probably all three causes combined to produce in him a correct apprehension of what is right. But a man is not reliable as a discoverer in science unless he can say, "Such-and-such a fact I observed myself first; such another I read about and afterwards verified by my own observation; such-and-such statements I have read, but have not yet verified; such another I have read, but my own observation points to the contrary opinion." This is not a mere question of priority, of who deserves the honour of a discovery: we do not trust the *scientific qualities* of one who does not *feel* quite differently about a fact which he himself observed from the way he feels about something he has read or heard. And even if he is making this distinction, it does not follow that he has performed any scientific act of mind. Not till he has thought in silence, not till knowledges derived from various sources combine to form a mental impression, can scientific action be said to have begun.

Suppose a youth gazes at the starry heavens till he has soaked in an impression of their varying aspect—that is instructive; but the instruction is not scientific, it is artistic. Suppose a navigator reads or is told that when the heavenly bodies appear in certain relative positions at a certain hour, the latitude must be so-and-so, that is useful technological instruction: it has no claim to be called scientific. (Technologic information is often miscalled "scientific" in advertisements of technical schools, but that is a purely slang use of the term which science leaders laugh to scorn.) Suppose we read up a history of the various theories which have been held as to the causes of phenomena presented by the heavenly bodies, that is in itself a historic or literary treatment of the subject, not a scientific one. But when a child has formed for himself a clear undisturbed impression of the earth's unmoveableness and the apparent motion of the sun, and then has read that astronomers believe the earth goes round and the sun does not go round the earth, if he then puts together in his mind the two apparently conflicting statements—that made by his senses and that made by his book—and lets them combine to create in him an impression which shall embrace both, then the sacro-sanct scientific act has

taken place within his mind. He has really done a bit of true science-work.

Now, in science colleges (barring the interference of the "coach") this *sine quâ non* of scientific method is to some extent provided for. In the laboratory, the youth is helped to observe for himself. In private study he has to read text-books, in which are recorded the observations made by others; he attends lectures, in which is narrated the history of the successive theories by which the phenomena have been variously explained The partial impressions are given to him separately, at different hours; usually in different rooms and by different professors. Each, therefore, makes its own distinct and separate record on the mind. And, of course, every student worth mentioning takes time occasionally to *think*, *i.e.*, to make silence in his soul, as Gratry calls it; to bar the access to all fresh impressions and let the impressions already made come together and correct each other. Now, the point to which I wish specially to call your attention is, that in a science college, the arrangements being such as I have described, the mere laws of collegiate good conduct generate the essential scientific method without need of any formal defining of the method itself; the rule for the pupils is to give their whole attention to what they are doing at the time; the rule for the teachers is that each is to abstain from intruding on or interfering with the work that is being done at the moment by any other. Each has his hour wherein to make his own impression. Each knows that the impression being made by any other is partial and incomplete, and to some extent even misleading; each knows that he himself could often make the immediate impression more correct by interposing; each knows that he must not so interpose till his own hour for speaking has come; he must be content to keep silence, yea, even from good words, till the partial—often from his point of view partially erroneous—impression made by his fellow-teacher has had time to fully stamp itself on the pupil's mind. The system would in itself be admirable were it not spoiled by the necessity for preparing for examination. This necessity involves employing a "coach," *i.e.*, someone who will try to make on the pupil's mind the very impression which he wishes the pupil to reproduce at examination. It is vain to talk of *scientific method* where any such aim is being pursued at all. A good classical "coach," like a good classical examiner, is really an aid to true education; but of the science "coach" it is not at all too much to say that the mischief he does is in direct proportion to the perfection of his method, multiplied by the amount of his ability and the excellence of his intentions. But in so far as the examiner and the "coach" can be eliminated, the organisation of a science college does really correspond in its main features to what is essentially a scientific method of study.

And now we come to the questions:—What are the special difficulties in the way of introducing true scientific method into elementary teaching? And how can these difficulties best be met?

The faculties of a child are easily fatigued, and the nature of his work must be constantly varied. We cannot give him an afternoon in the laboratory, a whole hour's lecture on theory, an hour's reading up about facts, a long walk occupied in trying to think out a problem; the attitude, the mode of study, must vary every few minutes. But we cannot every few minutes change the teacher, the room, the whole *mise-en-scene*, as is done in College in passing from laboratory to lecture hall; one elementary teacher must represent in turn at least three persons: the lecturer, the laboratory teacher, and the author of the text-book used for reference. Nor can the child be trusted to think in silence unhelped; the attention of children wanders and is in need of assistance from the teacher. She must be constantly on the watch to make the necessary mental silence for him, by recalling his attention from external facts and from irrelevant topics, to the special point under consideration. She therefore has, as it were, to act the parts, not only of two teachers and a text-book—she must, to some extent, personate also a fourth, that Formless One, the inner voice, with which the adult science-student holds converse when he retires into silence to think out the meaning of apparently conflicting evidence. If she is really to introduce the child to scientific method, if she is to make in her schoolroom the peculiar mode of sequence on which true science method depends, she must somehow contrive, single-handed, to keep the four departments of the study separate in the child's mind. For, I repeat, the essence of scientific method

depends on keeping apart, *till fully ripe within the mind*, influences which in literary or ethical teaching are allowed to act simultaneously, or at least are never clearly distinguished from each other. And not only is there no external change of *mise-en-scene* to help her; there can be no conventions of external courtesy to check her; if she is tempted to let one of her functions interrupt another, no consideration of discipline or of good breeding comes to her aid in resisting the temptation. She can by no possibility conform to anything that deserves the name of scientific method except by cultivating such inner courtesy of all her various functions to each other that each will keep silence, even from good words, when another is making some partial impression by which the pupil is evidently partially misled.

When a really great scientific man takes it into his head to give an elementary lesson, he sets the example of such inner courtesy; and it is just this peculiar reticence which gives so fine a flavour of high-class science to the teaching of very elementary subjects when the teacher is a very great man;* and, as I said before, one sometimes meets with an elementary teacher who adopts the great man's method by virtue of sheer heaven-sent instinct. She does truly sow the seed of true scientific method. But she sometimes has a hard time of it, and her sapling has to grow in adverse conditions, owing to misapprehension on the part of her employers.

If I might venture to offer a word of advice to parents it would be this:—If you wish to make of your children clever young scientists, abandon all notion of true scientific method. Engage a smart young up-to-date governess, and instruct her, whenever they say anything that would not bring good marks at an examination, to pounce upon it at once and insist on their saying whatever she thinks would satisfy an examiner. But if you wish them to get an insight into the way that great science is created, give no more time to science than you can afford to let them spend in the really scientific way. Do not let them prepare for any examination in natural or physical science. Give them a good foundation of training in languages, especially in some dead language;

---

* Many remember with delight the lectures of Faraday and Tyndall to juvenile audiences.

children must be drilled into the power of learning exactly what it is that other people have said, for those who lack this power lack the continuity which is the cause of human progress and the condition of truly human thought; and no better way has yet been found of acquiring the power of taking in what others say, than by studying the languages in which other people speak, especially those languages which are consecrated to the sacred past. Let the classical examiner work his will with the children. For science itself get a teacher who not only loves but reverences the works of the Creator. Leave the lover of nature to teach as she is inspired by the Author of nature. And if you find that she is sometimes inspired to refrain from giving information while the child is trying to observe, or from distracting him by the intrusion of ready-made theories when he is thinking out a question for himself, be scientific enough yourself to restrain your own impatience; do not rush in where angels and great scientific men would be respectfully silent; make an act of mental homage as you would at the threshold of a temple; for the place into which you are tempted to intrude is the holy ground of science.

[NOTE.—Some readers may be tempted to think that in mathematics there are no tolerated and mutually corrective errors. The space at my disposal does not admit of entering fully into that question: it is enough to say here that mathematical method is the typical and perfect scientific method, in which the warp and woof of *polar partial apprehensions* are so fine and so perfectly woven that the texture is, so to speak, hardly visible to the naked eye; but it reveals itself on close analysis of mathematical procedure; and, indeed, it was by means of mathematical investigation that the principle underlying all true scientific mental action was first brought to formulation. Since the above address was delivered, my attention has been called to an admirable work addressed to parents, by W. Tarver, *Some Observations of a Foster-Parent* (Constable & Co.), in which he gives excellent reasons for supposing that a thorough grounding in Latin is a better preparation for a scientific career than learning "sciences" at school. The classical tripos man is obliged to give an account of the opinions held by ancient writers on physics, astronomy, and natural history; *opinions which neither he nor the examiner is supposed to endorse.* This is an excellent corrective of that shallow up-to-dateness which is the vice of modern pseudo-scientism.]

BROWNING AND ITALIAN ART.

Lecture delivered at House of Education.

BY REV. C. V. GORTON, M.A.,

Rector of Morecambe.

WITH Browning as our teacher and guide, I desire to note the Rise and Fall of art in Italy. I select five poems.

(1.) The first, "Old Pictures in Florence," takes us back to the first spring-birth of the national art—a spring-birth joyous with the "promise of May."

(2.) The second, "Fra Lippo Lippi," dwells on the first period of the Renaissance, revealing the strength and weakness of the movement.

(3.) The third, "Andrea Del Sarto," shews art struggling with the world losing its divine ideal.

(4.) In the fourth, "The Bishop orders his tomb at S. Praxed," we see art robbed of faith, vanquished by pride.

(5.) In the fifth, "Pictor Ignotus," we have a picture of the artist waiting on the age; art's true aim is foreshadowed.

One word, and that of apology, before I turn to the poems. When Ruskin lays down his pen, and says, "all that I have said in the last forty pages, Mr. Browning has said before me in as many lines"—I feel my present effort, if it aimed at anything beyond sending you to the poems themselves—would be an act of impertinence.

I.—OLD PICTURES IN FLORENCE.

It is a warm morning in March; the poet, wooed out by the sunshine, walks down his garden path. He leaned and looked over the aloed arch of the villa gate, there in the valley beneath—

> White and wide,
> And washed by the morning water-gold
> Florence lay out on the mountain-side.